

Sediment Incubation Experiment Status, 11/8/13

2013 Work to Date

- The incubation experiment was carried to completion and final samples were taken in September 2013.
- Samples are being analyzed in the analytical laboratory for sulfide, iron, sulfate, phosphorus, and Acid Volatile Sulfide (AVS).

Work Remaining

- Sediment analyses will take several more weeks, and Acid Volatile Sulfide (AVS) data may not be available until February 1 (although we are looking at options to speed up that turnaround time).
- When the data are available, Dr. Nate Johnson will be developing a simple reactive-transport model to characterize sulfate diffusion and reaction in sediment.
- Report writing—final reports due 12/31/13. Any outstanding data will be incorporated into the report as the data become available.

Items of Note

- This experiment is a preliminary attempt to understand the effect of temperature on the interaction of sulfate with sediment. The goal of the experiment is to explore the difference ambient temperature makes to the degree that elevated sulfate in water penetrates into underlying sediment, converts to sulfide, and later moves back into the overlying water as sulfate.
- Two sediment sources were used (Partridge River and St. Louis estuary) that differed significantly in the percentage of organic matter. Organic matter concentrations may control microbial activity.
- To simplify the experiment and to mimic winter conditions, no wild rice was grown in the sediment.